

LISTING OF THE CLAIMS

1. (Previously presented) A multimodal polymer composition comprising
at least one polymer (A) having a weight average molecular weight (M_w) of less than 60000 g/mol;
at least one polyolefin (B) having a higher weight average molecular weight (M_w) than the polymer (A); and
a filler, wherein the polymer composition without the filler (C) has a density of 940 kg/m³ or lower.
2. (Previously presented) A polymer composition according to claim 1 wherein the at least one polymer (A) is
 - (1) a polyolefin (1) having a weight average molecular weight (M_w) of 10000 to less than 60000 g/mol, or
 - (2) a wax having weight average molecular weight (M_w) of less than 10000 g/mol.
3. (Previously presented) A polymer composition according to claim 1 wherein the at least one polymer (A) is
 - (1) a polyolefin (1) having a weight average molecular weight (M_w) of 10000 to less than 60000 g/mol, or
 - (2) a wax having weight average molecular weight (M_w) of less than 10000 g/mol, and wherein
the polyolefin (1) is a low density polyethylene (LDPE), a linear low density polyethylene (LLDPE) or a linear medium density polyethylene (LMDPE).
4. (Previously presented) A polymer composition according to claim 1 wherein the at least one polymer (A) is
 - (1) a polyolefin (1) having a weight average molecular weight (M_w) of 10000 to less than 60000 g/mol, or
 - (2) a wax (2) having weight average molecular weight (M_w) of less than 10000 g/mol, and wherein
the wax is selected from one or more of

- (2a) a polypropylene wax having weight average molecular weight (M_w) of less than 10000 g/mol or a polyethylene wax having weight average molecular weight (M_w) of less than 10000 g/mol, or
- (2b) an alkyl ketene dimer wax having weight average molecular weight (M_w) of less than 10000 g/mol.
5. (Previously presented) A polymer composition according to claim 1 wherein the composition comprises
- (1) a polyolefin (1) having a weight average molecular weight (M_w) of 10000 to less than 60000 g/mol as a first polymer (A) and
- (2) a wax having weight average molecular weight (M_w) of less than 10000 g/mol as a second polymer (A).
6. (Previously presented) A polymer composition according to claim 1 wherein the polymer (A) has a density of lower than 945 kg/m³.
7. (Previously presented) A polymer composition according to claim 1 wherein the multimodal polymer composition is at least a bimodal polymer composition.
8. (Previously presented) A polymer composition according to claim 1 wherein the polyolefin (B) has a weight average molecular weight (M_w) of higher than 80000 g/mol.
9. (Previously presented) A polymer composition according to claim 1 wherein the polyolefin (B) is a polyethylene.
10. (Previously presented) A polymer composition according to claim 1 wherein the polyolefin (B) is a low density polyethylene (LDPE), a linear low density polyethylene (LLDPE) or a linear medium density polyethylene (LMDPE).
11. (Previously presented) A polymer composition according to claim 1 wherein the total polymer composition comprises 1 to 50 wt% of the polymer (A), 40 to 90 wt% of the polyolefin (B) and 1 to 50 wt% of filler (C).

12. (Previously presented) A polymer composition according to claim 1 wherein the polymer composition without the filler (C) has melt flow rate MFR_2 , according to ISO 1133, at 190 °C, of 5 to 20 g/10 min.
13. (Previously presented) A polymer composition according to claim 1 wherein the polymer composition without the filler (C) has melt flow rate MFR_3 , according to ISO 1133, at 190 °C, of 20 to 40 g/10 min.
14. (Previously presented) A polymer composition according to claim 1 wherein the polymer composition without the filler (C) has melt flow ratio MFR_3/MFR_2 of 2.5 to 4.5.
15. (Previously presented) (Previously presented) A polymer composition according to claim 1 wherein the polymer composition without the filler (C) has a ratio of the weight average molecular weight (M_w) to the number average molecular weight (M_n) of from 8 to 25.
16. (Previously presented) A polymer composition according to claim 1 wherein 95 wt% of the filler (C) has a particle size of less than 10 μm .
17. (Previously presented) A polymer composition according to claim 1 wherein the filler (C) is talc.
18. (Previously presented) A polymer composition according to claim 1 wherein the polymer composition further comprises antioxidants(s) and/or process stabilizers in an amount of less than 2000 ppm in the total composition.
19. (Previously presented) A polymer composition according to claim 1 wherein the polymer composition is a linear low density polyethylene (LLDPE) or a linear medium density polyethylene (LMDPE), and wherein the polymer (A) and polyolefin (B) are produced in a multi-stage polymerization process.
20. (Previously presented) A polymer composition according to claim 1 wherein the polymer composition is a linear low density polyethylene (LLDPE) or a linear medium density polyethylene (LMDPE), wherein the polymer (A) and the

polyolefin (B) are produced in a multi-stage polymerization process, and wherein the amount of comonomer units in the linear low density polyethylene (LLDPE) or the linear medium density polyethylene (LMDPE) is 0.1 to 1.0 mol %.

21. (Previously presented) A polymer composition according to claim 1 wherein the polymer composition is a linear low density polyethylene (LLDPE) or a linear medium density polyethylene (LMDPE), wherein the polymer (A) and the polyolefin (B) are produced in a multi-stage polymerization process, wherein each of the polymer (A) and the polyolefin (B) is a linear low density polyethylene (LLDPE) or a linear medium density polyethylene (LMDPE), and wherein the comonomer units are selected from the group consisting of C₃ α -olefin, C₄ α -olefin, C₅ α -olefin, C₆ α -olefin, C₇ α -olefin, C₈ α -olefin, C₉ α -olefin, C₁₀ α -olefin, C₁₁ α -olefin, C₁₂ α -olefin, C₁₃ α -olefin, C₁₄ α -olefin, C₁₅ α -olefin, C₁₆ α -olefin, C₁₇ α -olefin, C₁₈ α -olefin, C₁₉ α -olefin and C₂₀ α -olefin.
22. (Previously presented) A polymer composition according to claim 1 wherein the polymer (A) is a wax selected from one or more of
 - (1) a polypropylene wax having weight average molecular weight (M_w) of less than 10000 g/mol or
 - (2) a polyethylene wax having weight average molecular weight (M_w) of less than 10000 g/mol, or
 - (3) an alkyl ketene dimer wax having weight average molecular weight (M_w) of less than 10000 g/mol, and wherein the polyolefin (B) is a linear low density polyethylene (LLDPE) or low density polyethylene (LDPE).
23. (Previously presented) A polymer composition according to claim 1 wherein the polymer (A) is a wax selected from one or more of
 - (1) a polypropylene wax having weight average molecular weight (M_w) of less than 10000 g/mol or
 - (2) a polyethylene wax having weight average molecular weight (M_w) of less than 10000 g/mol, or

- (3) an alkyl ketene dimer wax having weight average molecular weight (M_w) of less than 10000 g/mol, and
- the polyolefin (B) is a linear low density polyethylene (LLDPE) or low density polyethylene (LDPE), and wherein the polymer composition further comprises a polyolefin (1) as a second polymer (A), wherein the polyolefin (1) is a linear low density polyethylene (LLDPE).
24. (Previously presented) A polymer composition according to claim 1 wherein the polymer composition is a linear low density polyethylene (LLDPE), wherein polymer (A) and polyolefin (B) are produced in a multi-stage polymerization process, wherein the amount of comonomer units in a linear low density polyethylene (LLDPE) is 0.1 to 1.0 mol %, and the polyolefin (1) of polymer A is a linear low density polyethylene (LLDPE) and is the lower molecular weight fraction of LLDPE, and the polyolefin (B) is a linear low density polyethylene (LLDPE) and is the higher molecular weight fraction of the LLDPE.
25. (Previously presented) A polymer composition according to claim 1 wherein the polymer composition is a linear low density polyethylene (LLDPE), wherein the polymer (A) and the polyolefin (B) are produced in a multi-stage polymerization process, wherein the amount of comonomer units in a linear low density polyethylene (LLDPE) is 0.1 to 1.0 mol %, wherein polyolefin (1) of polymer (A) is a linear low density polyethylene (LLDPE) and is the lower molecular weight fraction of LLDPE, and the polyolefin (B) is a linear low density polyethylene (LLDPE) and is the higher molecular weight fraction of the LLDPE, and wherein the polymer (A) and polyolefin (B) are a mechanical blend.
26. (Previously presented) A multi-layer material comprising
a substrate as a first layer (I)
a multimodal polymer composition according to claim 1 as at least a second layer (II).
27. (Previously presented) A multi-layer material according to claim 26 wherein the substrate is selected from the group consisting of paper, paperboard, aluminium film and plastic film.

28. (Previously presented) A multi-layer material according to claim 26 wherein the multi-layer material further comprises a third layer (III), which comprises a low density polyethylene (LDPE).
29. (Previously presented) A multi-layer material according to claim 26 wherein the low density polyethylene (LDPE) layer (III) has a melt flow rate MFR₂, according to ISO 1133, at 190°C, of at least 5 g/10 min.
30. (Previously presented) A film comprising a multimodal polymer composition according to claim 1.
31. (Previously presented) A process for producing the composition according to claim 1 comprising the steps of
- (1) producing the polymer (A) and the polyolefin (B) in a multi-stage process comprising a loop reactor and a gas phase reactor, wherein the polymer (A) is generated in at least one loop reactor and the polyolefin (B) is generated in a gas phase reactor; and
 - (2) blending and compounding the filler (C) and the composition comprising the polymer (A) and the polyolefin (B).
32. (Previously presented) A process for producing the composition according to claim 31 comprising the steps of
- (1) producing the composition comprising the polymer (A) and the polyolefin (B) using a catalyst, wherein the catalyst is a high activity procatalyst comprising a particulate inorganic support, and a chlorine compound deposited on the support,
 - (2) contacting the inorganic support with an alkyl metal chloride which is soluble in non-polar hydrocarbon solvents, and has the formula R_nMECL_{3-n} wherein R is a C₁-C₂₀ alkyl group, Me is a metal of group III(13) of the periodic table, n=1 or 2 and m=1 or 2, to give a first reaction product,
 - (3) contacting the first reaction product with a compound containing hydrocarbyl and hydrocarbyl oxide linked to magnesium which is soluble in non-polar hydrocarbon solvents, to give a second reaction product, and

- (4) contacting the second reaction product is contacted with a titanium compound which contains chlorine, having the formula $\text{Cl}_x\text{Ti}(\text{OR}^{\text{IV}})_{4-x}$ wherein R^{IV} is a $\text{C}_2\text{-C}_{20}$ hydrocarbyl group and x is 3 or 4, to give the procatalyst, and wherein the titanium compound which contains chlorine may be the same or different than the chlorine compound used in step 1.
33. (Previously presented) A process for producing a multi-layer material according to claim 26 wherein the multimodal polymer composition comprises
at least one polymer (A) having a weight average molecular weight (M_w) of less than 60000 g/mol;
at least one polyolefin (B) having a higher weight average molecular weight (M_w) than polymer (A); and
a filler (C),
and wherein the polymer composition without filler (C) has a density of 940 kg/m^3 or lower is applied on the substrate by a film coating line comprising an unwind, a wind, a chill roll and a coating die.
34. (Previously presented) A method for extrusion coating comprising applying to a material to be coated the multimodal polymer composition according claim.
35. (Currently amended) The method according to claim 34 wherein ~~the~~ the material to be coated is a multi-layer material comprising
a substrate as a first layer (I)
the multimodal polymer composition as at least a second layer (II).
36. (Previously presented) A method comprising preparing a film from the multimodal polymer composition according to claim 1.
37. (Previously presented) The method of claim 25, wherein the mechanical blend is an in-situ blend produced in a multi-stage polymerization process.
38. (Previously presented) The method of claim 36, wherein the film is a cast film.

39. (Previously presented) A polymer composition according to claim 1 wherein the composition comprises a polyolefin (1) having a weight average molecular weight (M_w) of 10000 to less than 60000 g/mol as the polymer (A) and a wax (2) having weight average molecular weight (M_w) of less than 10000 g/mol as a second polymer (A), wherein the polyolefin (1) is a low density polyethylene (LDPE), a linear low density polyethylene (LLDPE), or a linear medium density polyethylene (LMDPE).
40. (Previously presented) A polymer composition according to claim 1 wherein the composition comprises a polyolefin (1) having a weight average molecular weight (M_w) of 10000 to less than 60000 g/mol as the polymer (A) and a wax (2) having weight average molecular weight (M_w) of less than 10000 g/mol as a second polymer (A), wherein the wax (2) is selected from one or more of
(2a) a polypropylene wax having weight average molecular weight (M_w) of less than 10000 g/mol or a polyethylene wax having weight average molecular weight (M_w) of less than 10000 g/mol, or
(2b) an alkyl ketene dimer wax having weight average molecular weight (M_w) of less than 10000 g/mol.
41. (Previously presented) A polymer composition according to claim 1 wherein the polymer composition is a linear low density polyethylene (LLDPE) wherein the polymer (A) and the polyolefin (B) are produced in a multi-stage polymerization process, the comonomer units are selected from the group consisting of C₃ α -olefin, C₄ α -olefin, C₅ α -olefin, C₆ α -olefin, C₇ α -olefin, C₈ α -olefin, C₉ α -olefin, C₁₀ α -olefin, C₁₁ α -olefin, C₁₂ α -olefin, C₁₃ α -olefin, C₁₄ α -olefin, C₁₅ α -olefin, C₁₆ α -olefin, C₁₇ α -olefin, C₁₈ α -olefin, C₁₉ α -olefin and C₂₀ α -olefin, and the polyolefin (1) of the polymer (A) is a linear low density polyethylene (LLDPE) and is the lower molecular weight fraction of LLDPE, and the polyolefin (B) is a linear low density polyethylene (LLDPE) and is the higher molecular weight fraction of the LLDPE.
42. (Previously presented) A polymer composition according to claim 1 wherein the polymer composition is a linear low density polyethylene (LLDPE), wherein the

polymer (A) and the polyolefin (B) are produced in a multi-stage polymerization process, the comonomer units are selected from the group consisting of C₃ α-olefin, C₄ α-olefin, C₅ α-olefin, C₆ α-olefin, C₇ α-olefin, C₈ α-olefin, C₉ α-olefin, C₁₀ α-olefin, C₁₁ α-olefin, C₁₂ α-olefin, C₁₃ α-olefin, C₁₄ α-olefin, C₁₅ α-olefin, C₁₆ α-olefin, C₁₇ α-olefin, C₁₈ α-olefin, C₁₉ α-olefin and C₂₀ α-olefin, and the polyolefin (1) of the polymer (A) is a linear low density polyethylene (LLDPE) and is the lower molecular weight fraction of LLDPE, and the polyolefin (B) is a linear low density polyethylene (LLDPE) and is the higher molecular weight fraction of the LLDPE, and wherein the polymer (A) and the polyolefin (B) are a mechanical blend.

43. (Previously presented) The polymer composition of claim 42, wherein the mechanical blend is an in-situ blend produced in a multi-stage polymerization process.